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Seger

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(54) **DESK AND RECOVERY SYSTEM**

(71) Applicant: **Daniel E. Seger**, Hanover, MD (US)

(72) Inventor: **Daniel E. Seger**, Hanover, MD (US)

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(22) Filed: **Jun. 20, 2013**

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Related U.S. Application Data

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(51) **Int. Cl.**

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A61G 99/00	(2006.01)
A61G 7/015	(2006.01)
A61G 7/065	(2006.01)
A61G 7/07	(2006.01)
A61G 7/075	(2006.01)

(52) **U.S. Cl.**

CPC ***A61G 99/00*** (2013.01); ***A61G 7/015*** (2013.01); ***A61G 7/065*** (2013.01); ***A61G 7/07*** (2013.01); ***A61G 7/075*** (2013.01); *A61G 2200/325* (2013.01); *A61G 2200/38* (2013.01)

(58) **Field of Classification Search**

CPC A61F 5/00
USPC 5/610–613, 616; 128/845; 606/240, 242
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,091,014	A *	8/1937	Saak	606/244
2007/0290538	A1	12/2007	Walter	
2008/0134434	A1	6/2008	Celauro	

FOREIGN PATENT DOCUMENTS

WO	2007059045	A	5/2007
WO	2008057618	A	5/2008

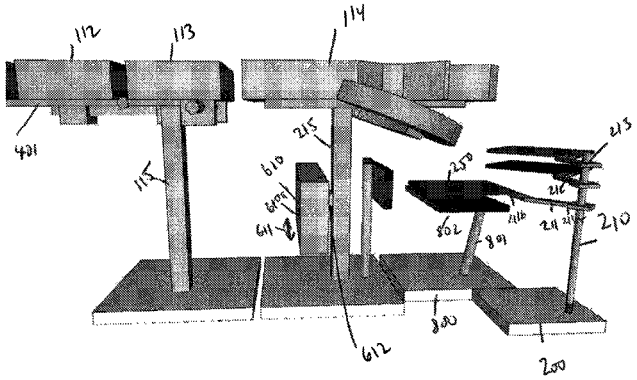
* cited by examiner

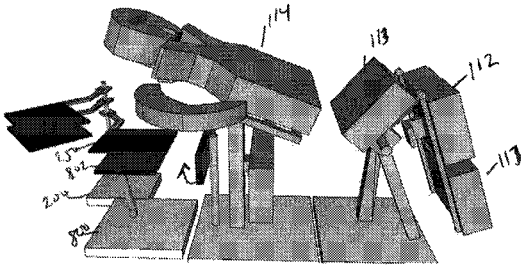
Primary Examiner — Fredrick Conley
(74) *Attorney, Agent, or Firm* — The Law Firm of Andrea Hence Evans, LLC

(57) **ABSTRACT**

The invention features a desk and recovery system that affords the user the ability to avoid stress and strain on the user's back, head and neck. The system features an upper body support featuring a torso or chest support which receives the stomach of the user for face-down support or face-down recovery. Adjustable arms are provided for an entertainment system, such as keyboard and monitor. The torso or chest, knee and buttocks supports can tilt, rotate and are height adjustable.

16 Claims, 6 Drawing Sheets





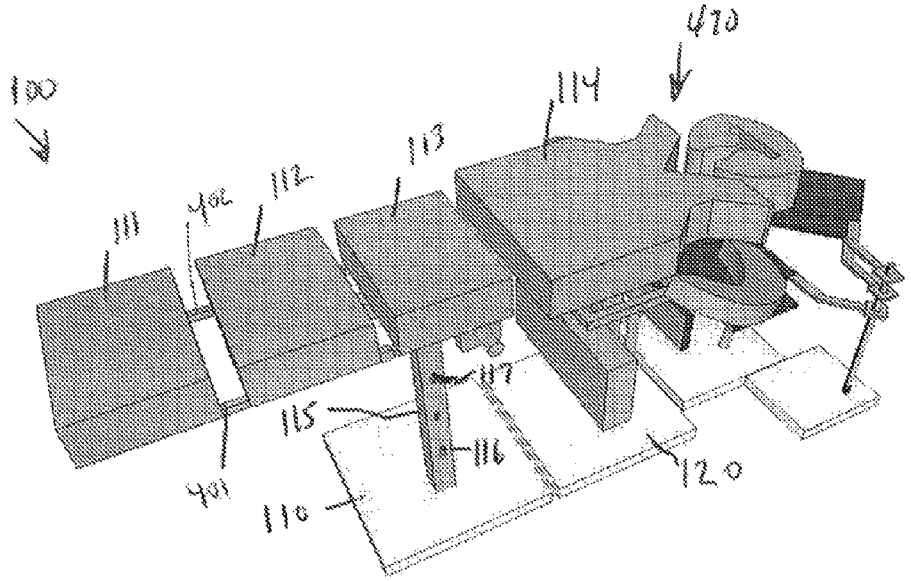


FIGURE 1

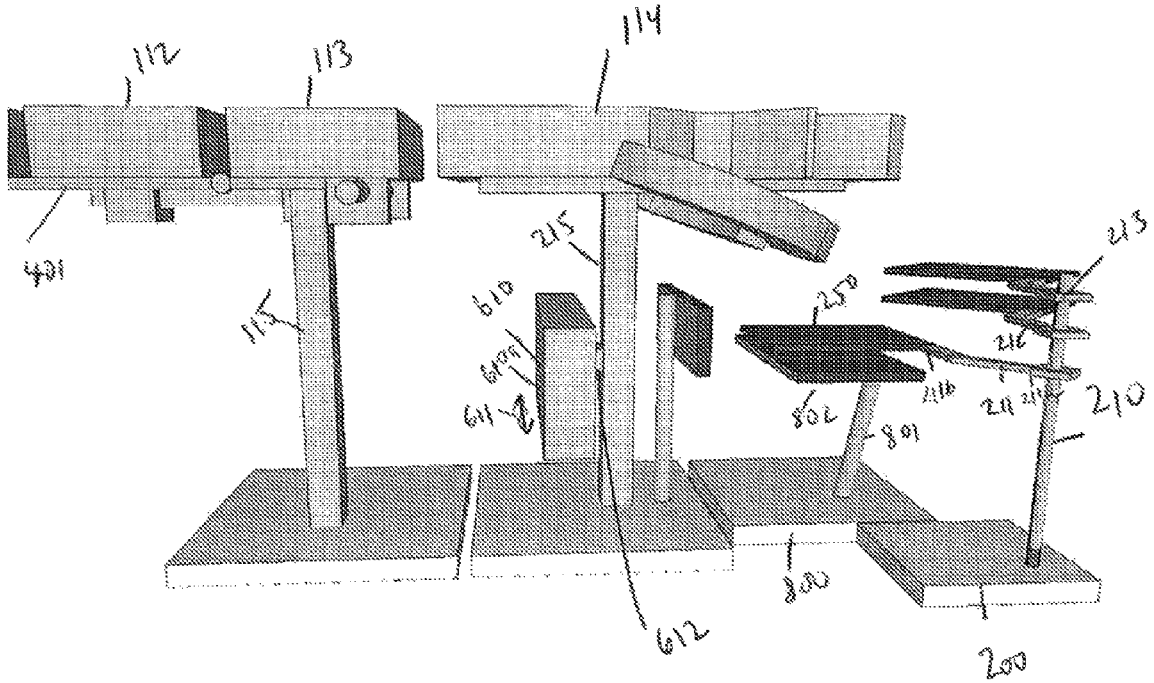


FIGURE 2

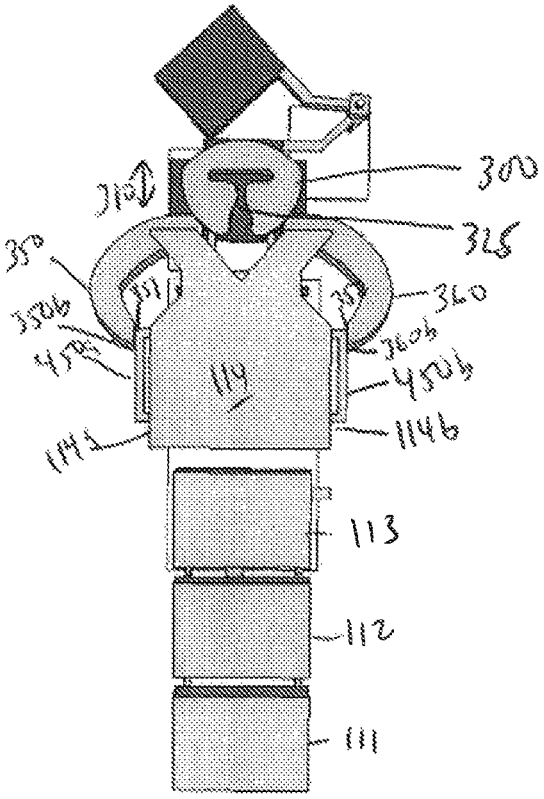


Figure 3

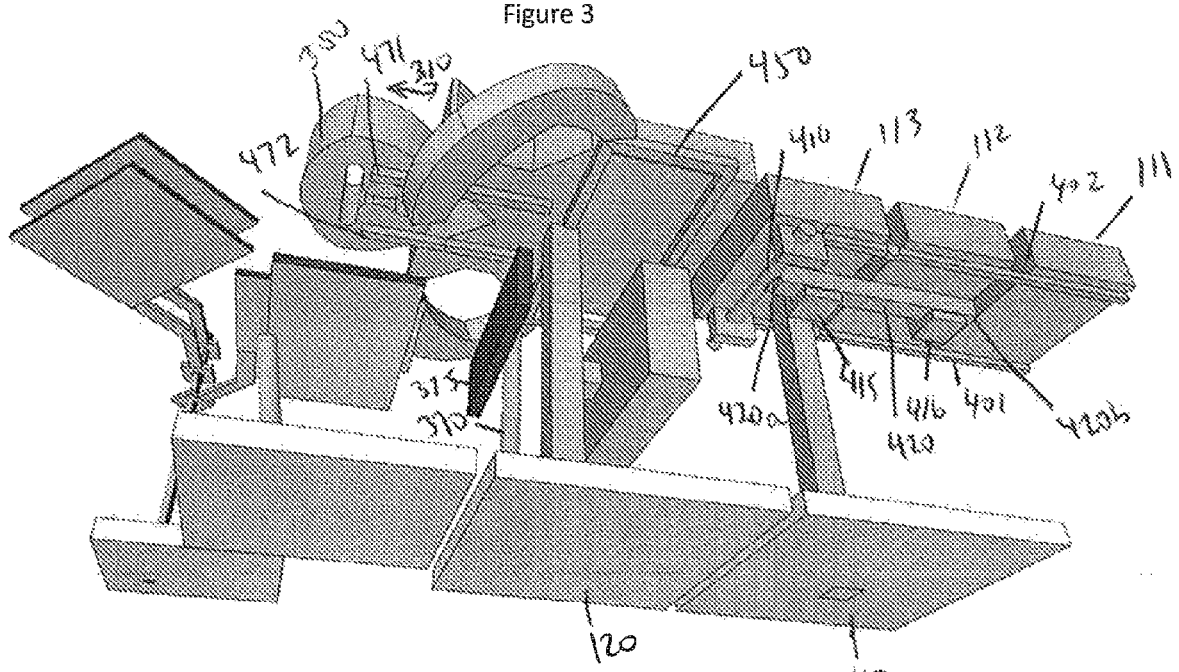


FIGURE 4

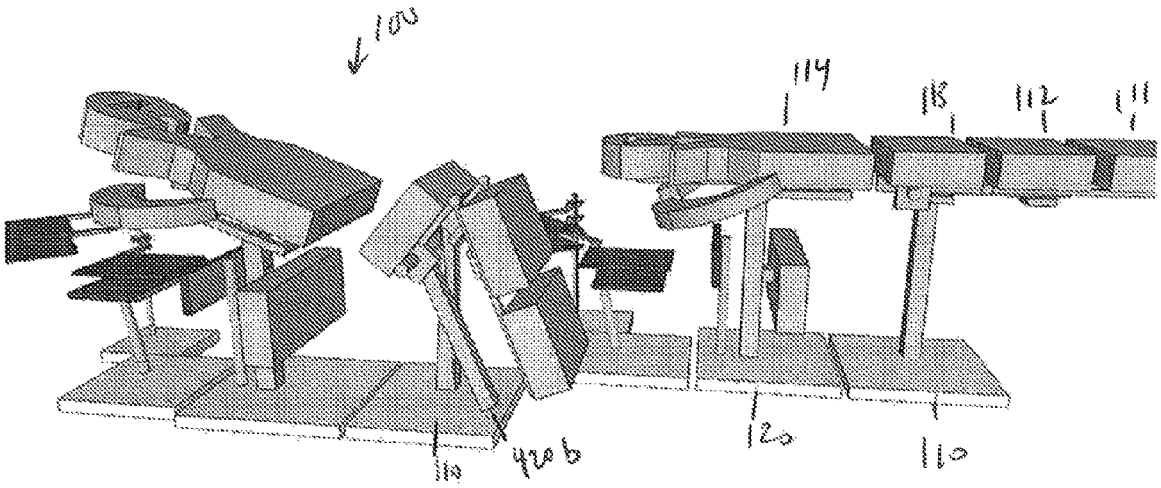


FIGURE 5

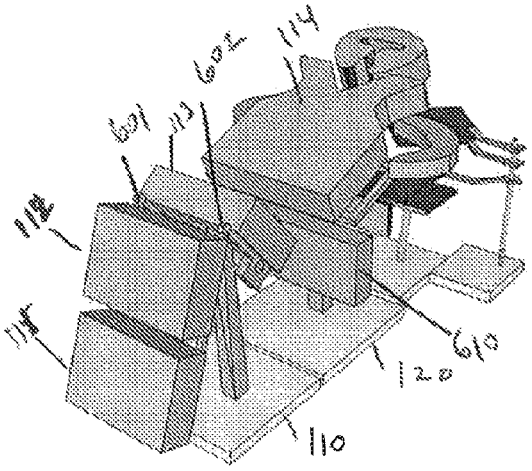


FIGURE 6

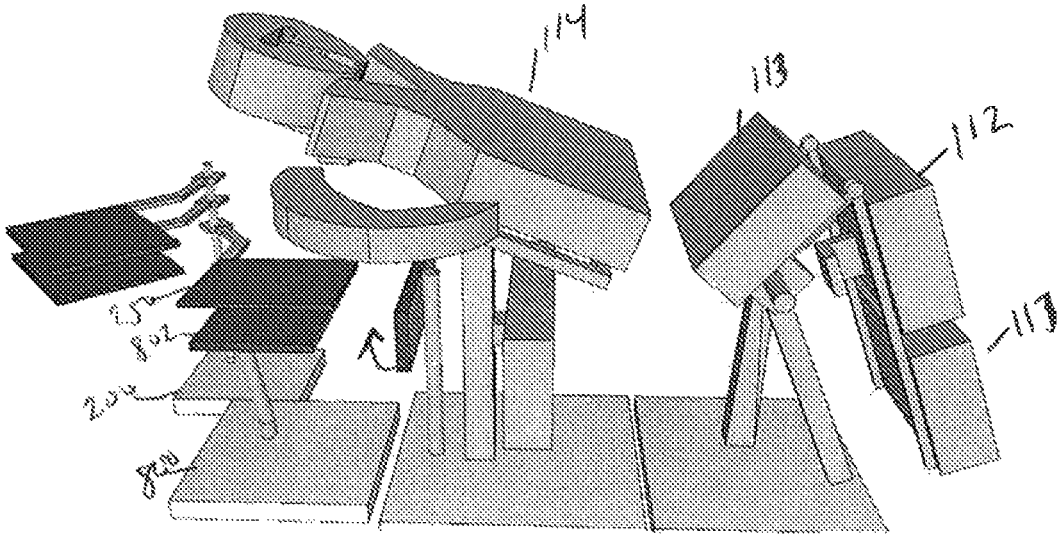


FIGURE 7

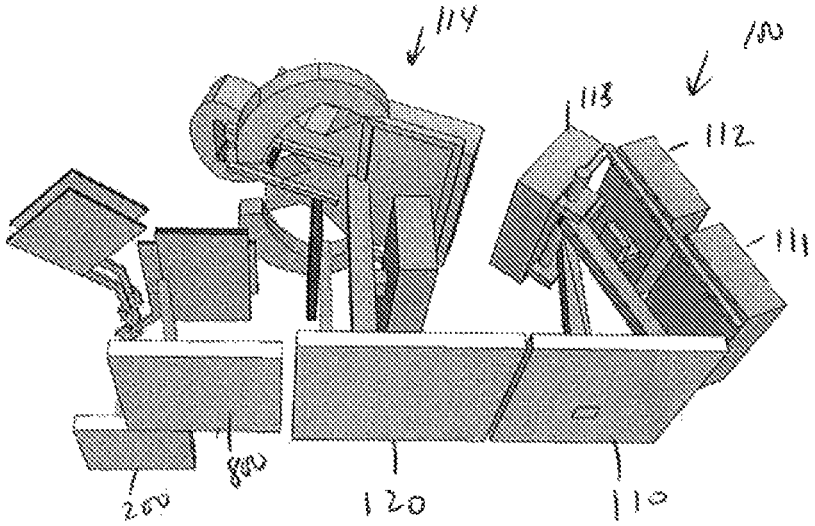


FIGURE 8

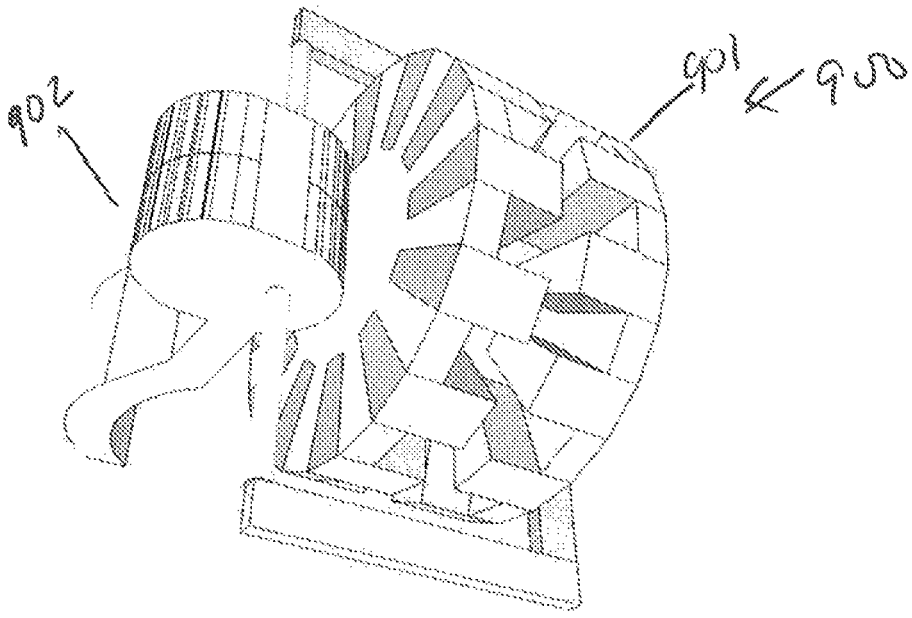


Figure 9

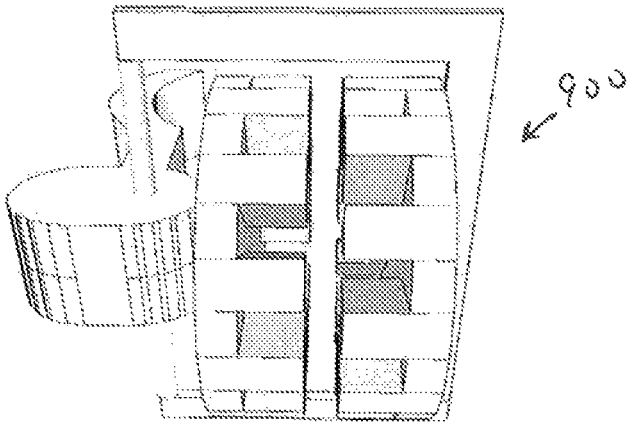


FIGURE 10

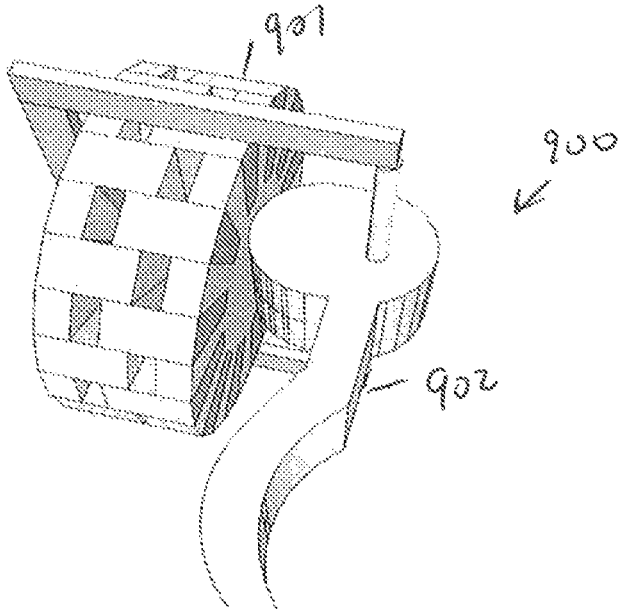


FIGURE 11

DESK AND RECOVERY SYSTEM

RELATED U.S. APPLICATION DATA

This application claims the benefit of provisional application No. 61/662,261, filed Jun. 20, 2012.

FIELD OF THE INVENTION

The present invention relates, in general, to a desk system which allows a user to lie down, providing minimal to no strain on the user's back.

BACKGROUND OF THE INVENTION

Most back pain is caused by mechanical problems with the joints and muscles of the back. Disorders of internal organs can also cause back pain. Strained muscles, inflammation of the nerves, poor posture, physical stress, loss of flexibility and scarring from previous injuries are common causes of back pain. To prevent further injury and relief from the pain, it is recommended that lying on the stomach in a face-down position can decrease back pain. After many surgeries, the patients are often required to lay face-down to recover and to avoid the recurrence of back pain.

After retinal surgery, such as a vitrectomy, face-down recovery or face-down positioning is essential for surgery recovery. Due to limited and restrictive recovery apparatus, face-down positioning is excruciating, boring, and stressful. During recovery, muscles ache, face swellings occur and entertainment and stimulation are limited.

SUMMARY OF THE INVENTION

The present invention provides an adjustable desk and recovery system that removes stress and strain from the user's back and provides entertainment and support.

An aspect of an embodiment of the invention provides a pin and hinge adjustment system which locks and unlocks the head, chest, knee and buttock supports enabling them to adjust in a horizontal, vertical or circular motion.

A further aspect of an embodiment of the invention features pivot points along the base of the supports which allow the supports to turn or oscillate to afford the system to be positioned in the best position for the user.

A further aspect of an embodiment of the invention features adjustable and extendable arms that support an entertainment system whereby the arms feature multiple pivot points so the arms can be extended vertically, horizontally or rotate and locked into position.

A further aspect of an embodiment of the invention features mirrors attached to the system to afford looking at surroundings without lifting the head or neck avoiding stress and strain on the head or neck.

A further aspect of an embodiment of the invention features collapsible arm rests which can extend out of the system to support the arms or into the system allowing the arms to be mobile.

Additional aspects, objectives, features and advantages of the present invention will become apparent from the following description of the preferred embodiments with reference to the attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of the desk and recovery system.

FIG. **2** is a side perspective view of the desk and recovery system.

FIG. **3** is a top view of the desk and recovery system.

FIG. **4** is a bottom perspective view of the desk and recovery system.

FIG. **5** is a perspective view of the desk and recovery system demonstrating the lower body support in a pivoted and horizontal position.

FIG. **6** is a perspective view of the desk and recovery system with the lower body support pivoted.

FIG. **7** is a side perspective view of the desk and recovery system with the lower body support pivoted.

FIG. **8** is a bottom perspective view of the desk and recovery system with the lower body support pivoted.

FIG. **9** is a perspective side view of the gear system of the desk and recovery system in an open position.

FIG. **10** is a front perspective view of the gear system of the desk and recovery system in an open position.

FIG. **11** is a front perspective view of the gear system of the desk and recovery system in a closed position.

DETAILED DESCRIPTION OF THE INVENTION

FIG. **1** is a perspective view of the desk and recovery system **100**. The system **100** features a lower body platform **110** and an upper body platform **120**. The platforms **110**, **120** support the lower body supports **111**, **112**, **113** and the upper body support **114**, respectively. An adjustable lower body base **115** is secured to the lower body platform **110**. The adjustable lower body base **115** may be pushed in using a force or screwed into the lower body platform **110**. Alternate attachment mechanisms may be used. The lower body supports **111**, **112**, **113** are attached to the lower body platform **110** so that their positioning and movement is independent from the upper body support **114**. The adjustable lower body base **115** extends upwards from the lower body platform **110**. The bottom of the lower body platform **110** contacts the ground surface. The lower body base **115** extends upwards from the top surface of the lower body platform **110**. The lower body base **115** is adjustable in a vertical direction such that the height of the lower body base **115** can be adjusted. A pin and hinge adjustment system secures the base **115** at the desired height. The outside of the base **115** has openings **116** which can receive a pin **117**. The pin **117** extends through the openings **116** and through the matching opening on the inside portion of the base **115**, which will prevent the inside portion of the base **115** from moving in a vertical direction. When it is desired to lower the base **115** or move it to a different height, the pin is removed and placed in the desired opening.

A first and second lower body rail **401**, **402** is connected to the lower body base **115**, as shown in FIG. **4**. FIG. **4** is a bottom perspective view of the desk and recovery system **100**. The base **115** is perpendicular to the rails **401**, **402**. The rails **401**, **402** are parallel to each other and spaced apart such that they receive and support the lower body supports **111**, **112**, **113**. The rails **401**, **402** contact the lower body supports **111**, **112**, **113** substantially near the edges of the lower body supports **111**, **112**, **113**. The rails **401**, **402** act as guides for the lower body supports **111**, **112**, **113**. The supports **111**,**112**, **113** slide along the rails independent of each other. For example, the supports **111**, **112**, **113** can be spaced apart, as shown in FIG. **3**, to relieve pressure on different parts of the users lower body. FIG. **3** is a top view of the desk and recovery system **100**. For example, if the user is taller, supports **111**, **112**, **113** can be spaced further apart from each other to support the user's body. Alternatively, additional supports may be added along the rail. Also, the supports can be sized to

be wider or longer to support various body types. Alternatively, less supports can be positioned along the rails to support the user's lower body. The lower body support **113** supports the buttocks area of the user. The lower body support **112** supports the lower torso including the thigh area of the user. The lower body support **111** supports the calves and foot area of the user.

FIG. **6** is a perspective view of the desk and recovery system **100** with the lower body supports **111**, **112**, **113** pivoted. The lower body supports **111**, **112**, **113** can move from a horizontal position to an angled position to allow for blood flow of the user's body and to allow the user to be repositioned on the system **100**. FIG. **5** is a perspective view of the desk and recovery system demonstrating the lower body support in a pivoted and horizontal position. Pivot points **601**,**602** are positioned along the lower body rails **401**, **402**. The lower body supports pivot and move along the lower body rails **401**, **402**. The pivot points **601**, **602** are located along the rails **401**, **402**, respectively. The points **601**, **602** are between the lower body support **113** and lower body support **112**. The points **601**, **602** act as a joint that allows the rail to move from a horizontal position to an angled position, along with the connected lower body supports. The points **601**, **602** allow the rails and connected supports to move to a downward angle position so that the lower body support **113** is angled downwards towards the upper body support **114** and lower body supports **112** and **111** are angled downwards away from the upper body support **114**. In this position, as shown in FIG. **6**, the user's upper body can rest on the upper body support **114** and the user's buttocks will be rest on the lower body support **113**. The user's knees will rest against the knee support **610**. Although one set of pivot points **601**, **602** are shown, an additional set of points can be positioned along the rails between the lower body support **112** and lower body support **111** so that the supports can pivot at an upwards or downwards angle to support the user's body. The supports are made of padding and cushion. Additional padding may be added to the supports to add extra cushion and comfort to the user's body parts.

The knee support **610** is on the adjustable upper body base **215**. FIG. **2** is a side perspective view of the desk and recovery system **100**. The knee support **610** is parallel to the adjustable lower body base **115** whereby the front of the user's knees will contact the front surface **610***a* of the knee support **610**. The knee support **610** can be adjusted in a vertical direction **611**. A knee rod **612** on the back side of the knee support **610** slides upwards and downwards along the inside front side of the adjustable upper body base **215** to move the knee support to its desired vertical position.

FIG. **7** is a side perspective view of the desk and recovery system **100** with the lower body supports **111**, **112**, **113** pivoted. FIG. **8** is a bottom perspective view of the desk and recovery system **100** with the lower body supports **111**, **112**, **113** pivoted. A brace **410** is provided underneath the lower support **113** to provide extra support of the pad and to help to support the weight of the user. The brace **410** spans between the left and right edges of the support **113**, between rails **401**, **402**. Additional braces may be added to provide additional support, if necessary. A first kickstand receiver **415** hangs underneath the lower body support **113**. The first kickstand receiver **415** is C-shaped and the opening holds a first end **420***a* of kickstand brace **420** in an upwards position along the undersides of the lower body supports **113** and **112**. A second kickstand receiver **416** hangs underneath the lower body support **112** and supports a second end **420***b* of the kickstand brace **420**. When the lower body support **113** pivots along points **601**, **602**, the kickstand brace **420** is disconnected from the receivers **416** and **415** so that end **420***b* contacts the top surface of lower body platform **110**, as shown in FIG. **5**. The kickstand brace **420** is angled along the lower body platform **110** and the lower body base **115** remains at a right angle along the lower body base **115**. The kickstand brace **420** provides additional support to the lower body support **113** as it is in the pivoted position.

The recovery system further comprises an upper body platform **120**. An adjustable upper body base **215** extends upwards from the upper body platform. An adjustable upper body base **215** is secured to the upper body platform **120**. The adjustable upper body base **215** may be pushed in using a force or screwed into the lower body platform **120**. The bottom of the upper body platform **120** contacts the ground surface. The upper body base **215** is adjustable in a vertical direction such that the height of the upper body base **215** can be adjusted. An upper body support **114** is secured to the upper body base **215**. The upper body support supports the shoulder area of the user, chest and stomach area of the user. The upper body support may be designed as one pad which receives most of the user's torso or multiple pads that can be adjusted to accommodate the length of the user's torso. The pads can be adjusted in a sliding motion towards or away from each other. A square bracket **450** is underneath the upper body support **114**, as shown in FIG. **4**. The square bracket **450** is larger than the area of the upper body support **114** so that the left **450***a* and right **450***b* sides of the bracket **450** extend further out from the left **114***a* and right **114***b* sides of the upper body support **114**, as shown in FIG. **3**. The left and right sides **450***a*, **450***b* of the bracket **450** can be gripped by the user to help them position their body in a desired position onto the system **100**. Furthermore, the bracket **450** adds additional support to the upper body support **114** to support the additional weight of the user. The upper body support and lower body support move independently from each other.

The front area **470** of the upper body support **114** features head support rails **471**, **472** which receive a head support **300**. The head support **300** adjustable along the rails **471**, **472** in a left and right direction shown by arrows **310**. The head support **300** features a T-shaped opening **325** where the opening aligns with the eyes, nose and mouth area of the user on the system **100**. The opening **325** also allows for ventilation and airflow to provide additional comfort to the user. The head support is a cushion is positioned near the top area of the head support base to support the head of the user. The rails below the head cushion allows the head cushion to slide in a vertical up and down direction or a left and right angled position. The head cushion may be in the form of a silk pillow for extra cushion and comfort and may have additional opening sin the center to allow ventilation exposing the user's nose and mouth. The opening in the pillow can be designed so only the forehead rests on the pillow.

A table base **370** near the front area of the upper body platform **120** extends upwards from the platform **120**. A hinge along the top area of the table base **370** is connected to a table **375**, shown in a rest position in FIG. **4**. In a rest position, the table **375** is folded down. In a use position, the table moves upwards around the hinge in a direction shown by arrow **700**, shown in FIG. **7**. The top surface of the table **375** aligns with the opening **325**. Thus, the user can view the top surface of the table and any objects placed on the top surface of the table while on the system **100**.

The system further features a first arm support **350** and a second arm support **360**. The back ends **350***b* and **360***b* are connected with a rotating gear to the front left edge **352** and left right edge **353** of the bracket **450**, as shown in FIG. **3**. The

rotating gear allows the arm supports **350**, **360** to adjust upwards or downwards along the edges of the bracket **450**.

The recovery system comprises a desk platform **200**, shown in FIG. **2**. An adjustable desk base **210** is secured to the desk platform **200**. The adjustable desk base **210** may be pushed in using a force or screwed into the desk platform **200**.

Alternate attachment mechanisms may be used. The adjustable desk base extends upwards from the desk platform. Arms **211**, **212**, **213** are connected to the desk base **210**. The first end **211***a* of the arm **211** is connected to a connector which has an opening that is received by the desk base **210**. The opening is surrounded by edges that allow the opening and connected arm to swivel or rotate around the desk base **210**. The second end **211***b* of the arm **211** is connected to a table **250**. Arms **212** and **213** feature the same structure as arm **211** with ends and tables connected. The arm rests can extend out of the upper body support and support the arms of the user. The arm rests can be inserted and secured inside of the chest support, when not in use, or extended outside of the upper body support to allow the arms to be mobile and not supported or resting on the arm rests.

The tables can be positioned so that their top surface is aligned with the opening **325** of the head support **300**. Objects or devices, for example can be placed on the surface of the tables and the user can easily rotate the table in a position so that it is aligned with the opening or in a position so that it is not aligned with the opening. The arms can hold the entertainment system. The entertainment system may be stereo system, laptop computer or a desktop computer with a monitor and separate keyboard, for example. The arms can be designed to have additional shelves extending out of them to separate the entertainment system or to provide additional areas to support objects such as books, cups or any personal items.

An additional table **802** supported by a base **803** and platform **800** is shown in FIG. **2** with one table. As discussed, the table can support any items desired by the user. The table can fold into a use and nonuse position as described above when the table is aligned with the opening **325**.

FIG. **9** is a perspective side view of the gear system **900** of the desk and recovery system **100** in an open position. FIG. **10** is a front perspective view of the gear system **900** of the desk and recovery system **100** in an open position. FIG. **11** is a front perspective view of the gear system **900** of the desk and recovery system in a closed position. The gear system **900** is located on the pivot points or all parts of the system that rotate. The system features a gear **901** and lever **902**. The lever **901** lever secures the gear in a position to prevent movement.

As the the quick release lever **902** is moved from 0 degrees to 180 degrees the distance between the axle and the base of the gear is increased substantially, which locks the gear into place preventing rotation via the teeth on the gear, as shown in FIGS. **9** and **10**. The lever is attached to the back of the gear it comes into contact with through magnetic forces so that when you move it from 180 degrees to 0 degrees, the gear moves out with it allowing rotation once again as shown in FIG. **11**. For example, the gears are connected to points **601** and **602**.

When the rail is rotated to its desired location, the lever locks the gear in position and released when it is desired to adjust its location.

It is preferred that all bases that move in a vertical direction use the pin system described above. However, alternate vertical adjustment systems may be used to adjust the height of the system.

A left and right minor can be attached to the front of the system from the upper body support or head support to afford the user the ability to view surroundings without lifting the head or neck avoiding stress and strain on the head or neck. The mirrors can be attached to mirror arms that allow the length of the arms to be shortened and the mirrors are attached in a manner that they can be adjusted or rotated.

The desk and recovery system can be positioned from left to right such that the buttock support is next to the knee support. The knee support is in between the chest support and buttock support. The adjustable arms are in the front area of the system and support the entertainment system. The system can be reversed from right to left in the same arrangement. Furthermore, the system pivot points can be designed to allow upwards angled positioning of the joints and rails. Alternatively, if the user desires to lie on their back, the system **100** can be structured and positioned so that the upper body support **114** moves in an upwards angled direction. The lower body support **113** can remain in a horizontal position to support the bottom surface of the user's buttocks. The back surface of the user's legs rest on the lower surfaces **112**, **111** and the user can position his body in a reclining, standing or fully horizontal position. The supports **110**, **120** can be spaced apart a distance described by the user to support the user's body as desired.

In use, a user can lay face down onto the system and remove stress and strain from the user's back but be afforded the ability to be entertained or to work with the objects on the table. The platforms may be removed and the system can be placed directly onto the floor surface and spaced apart to receive users of all heights.

The invention has been described in detail with particular reference to certain preferred embodiments thereof, but it will be understood that variations and modifications can be effected within the spirit and scope of the invention.

The invention claimed is:

1. A recovery system comprising:

a lower body platform;

an adjustable lower body base extending upwards from the lower body platform;

a first and second lower body rail on the lower body base;

pivot points along the lower body rails, a first lower body support on the first and second lower body rail, wherein the first lower body support pivots and moves along the lower body rails,

an upper body platform;

an adjustable upper body base extending upwards from the upper body platform;

a knee support on the adjustable upper body base;

a bracket on the adjustable upper body base which supports an upper body support,

wherein a front area of the upper body support features rails which receive a head support, wherein the head support is adjustable along the rails.

2. The recovery system of claim **1**, further comprising a second lower body support on the first and second lower body rail, wherein the second lower body support moves independently from the first lower body support.

3. The recovery system of claim **1**, further comprising an upper body platform;

an adjustable upper body base extending upwards from the upper body platform;

a knee support on the adjustable upper body base;

a bracket on the adjustable upper body base which supports an upper body support,

wherein a front area of the upper body support features rails which receive a head support, wherein the head support is adjustable along the rails.

4. The recovery system of claim 1, wherein the upper body support and lower body support move independently from each other.

5. The recovery system of claim 1, wherein arm supports are connected to the bracket on the adjustable upper body base.

6. The recovery system of claim 1, further comprising an opening on the head support, wherein the opening aligns with a first table.

7. The recovery system of claim 1, further comprising a desk platform;

an adjustable desk base extending upwards from the desk platform;

at least one arm on the adjustable desk base, wherein the at least one arm features a second table that rotates along the adjustable desk base.

8. The recovery system of claim 1, further comprising a gear system on the pivot points, wherein the gear system features a gear and a lever, whereby the lever secures the gear in a position to prevent movement.

9. A recovery system comprising:

a lower body platform;

an upper body platform;

an adjustable lower body base extending upwards from the lower body platform;

an adjustable upper body base extending upwards from the upper body platform;

a first and second lower body rail on the lower body base;

pivot points along the lower body rails,

a first lower body support on the first and second lower body rail, wherein the first lower body support pivots and moves along the lower body rails;

an upper body support on the adjustable upper body base,

wherein the lower body support moves independently from the upper body support;

a gear system on the pivot points, wherein the gear features a gear and a lever,

whereby the lever secures the gear in a position to prevent movement.

10. The recovery system of claim 9, wherein the adjustable lower body base and adjustable upper body base adjusts in a vertical direction.

11. The recovery system of claim 9, wherein the first and second rail extends horizontally or in an angled position.

12. The recovery system of claim 9, further comprising a gear system on the pivot points, wherein the gear system features a gear and a lever, whereby the lever secures the gear in a position to prevent movement.

13. A recovery system comprising:

a lower body platform;

an adjustable lower body base on the lower body platform;

a first and second lower body rail on the lower body base;

pivot points along the lower body rails,

a first lower body support on the first and second lower body rail, wherein the first lower body support pivots and moves along the lower body rails gear system on the pivot points, wherein the gear system secures the rail in a position to prevent movement.

14. The recovery system of claim 13, further comprising an upper body platform;

an adjustable upper body base on the upper body platform;

a knee support on the adjustable upper body base;

a bracket on the adjustable upper body base which supports an upper body support,

wherein arm supports are connected to the bracket.

15. The recovery system of claim 14, wherein a front area of the upper body support features rails which receive a head support, wherein the head support is adjustable along the rails.

16. The recovery system of claim 13, further comprising a desk platform;

an adjustable desk base on the desk platform;

at least one arm on the adjustable desk base, wherein the at least one arm features a table that rotates along the adjustable desk base.

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